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HUNGARIANS USE CENTRIFUGAL PROCESS FOR CASTING STEEL

STAT

The Wilhelm Pieck Vagon es Gepgyar (Wilhelm Pieck Railroad Car and Machine Factory) has recently succeeded in casting steel as well as iron by the centrifugal method. Regular molds and cores were used, but the cores had to be fastened more securely than for stationary casting to prevent the centrifugal force from dislodging them.

The new casting proced re required cores made of very fine-grained sand. The hardness of the core and the extent to which it expanded and contracted in response to heat had to be taken into consideration also.

The core which proved satisfactory in this case was made of six parts "Dissel" sand, four parts P-14-type sand, 3.3 percent [sic] bentonite and 1.7 percent [sic] refractory material. The core was coated evenly with a solution consisting of 5 liters of water, 8 liters of quartz meal, .7 decagrams of table salt, and one liter of molasses. Air was allowed to escape through perpendicular openings in the side of the core. Drying occurred at a temperature of 200 degrees centigrade.

The metal was melted in the usual way. A bottom-pour ladle was used to empty the molten metal into the centrifugal casting machine. Centrifugal casting requires the ladle to be as nearly full as possible. During the pouring, the casting machine rotated at a speed of 160-200 revolutions per minute. When the chamber was filled, the speed was increased 350-370 revolutions per minute, and the casting machine was allowed to rotate for a total of 3-5 minutes. To prevent molten steel from splashing out, the machine was set in an opening below floor level, and this opening was covered as soon as the chamber was full.

The metal cast by the centrifugal method had a tensile strength of 55.7 kilograms per square millimeter, an elongation of 16 percent, and a reduction in area of 27.6 percent; its yield point was 30 kilograms per squae millimeter. The parts produced were dense and flawless.

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Technicians of the factory constructed the centrifugal casting machine from spare parts available in the shops. An article written for the machine industry encyclopedia by Nehenzi /Nekhendze/ and P. N. ..ksenov, Soviet scientists, served as a guide for the construction of the machine and for the casting procedure.

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